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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,215	02/15/2002	Norman Szalony	10541-1273	3067
29074	7590	03/23/2004	EXAMINER	
VISTEON 29074 BRINKS HOFER GILSON & LIONE P.O. BOX 10395 CHICAGO, IL 60611			TO, TOAN C	
			ART UNIT	PAPER NUMBER
			3616	

DATE MAILED: 03/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/077,215

Applicant(s)

SZALONY ET AL.

Examiner

Toan C To

Art Unit

3616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-6 and 9-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-6 and 9-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fletcher et al (U.S. 5,903,965) in view of Hashimoto et al (U.S. 5,503,481).

Fletcher et al discloses a shaft to transfer torque in a vehicle with the following: a first member (22) having internal splines (22b); a second member (24) having external splines (24b) engagable with the internal splines (22b) to allow telescopic movement between the first member (22) and the second member (24) and to transfer torque between the first member and the second member; the external splines (24b) having a coating applied to a surface of the external splines (see column 4, lines 9-10) to reduce friction during the telescopic movement; wherein the coating is nylon (see column 4, lines 9-10).

Fletcher et al does not directly disclose the invention wherein the surface of external splines is isotropic surface finish.

Hashimoto et al teaches the invention wherein the surface is isotropic surface finish.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the shaft of Fletcher et al by using teaching of Hashimoto

et al to provide isotropic surface finish for the external splines of Fletcher et al then applying coating on top of the isotropic surface finish in order to reduce friction such that telescopic movement between the first and second shafts of McClanahan is more sufficient to prevent possibility of damage between the first and second shaft.

3. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fletcher et al (U.S. 5,903,965) and Hashimoto et al (U.S. 5,503,481) and further in view of Japan Publication (JP401305196A).

The combination of Fletcher et al and Hashimoto et al discloses every element of the invention as discussed above except that the coating is tungsten disulfide and measures less than approximately 10 microns thick.

Japan Publication (JP401305196A) teaches the invention wherein the coating is tungsten disulfide to reduce friction.

It would have been obvious design choice to one having ordinary skill in the art at the time the invention was made to modify the invention of Fletcher et al by applying a very thin layer of tungsten disulfide as taught by Japan Publication (JP401305196A) on the surface of external spline of Fletcher in order to reduce friction such that telescopic movement between the first and second shafts of McClanahan is more sufficient to prevent possibility of damage between the first and second shaft.

4. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lawrence (U.S. 2,163,981) and McClanahan (U.S. 5,720,102 and further in view of Hashimoto et al (U.S. 5,503,481).

Lawrence discloses a suspension system for a vehicle having a wheel and a power distribution device (6) with the following: a biasing device (34) to support the vehicle on the wheel and to absorb road imperfections; a shaft (8) to transfer torque from the power distribution device (6) to the wheel; the shaft including a first member (12) having internal splines; a second member (13) having external splines engagable with the internal splines to allow telescopic movement between the first member and the second member and to transfer torque between the first member and the second member; wherein the first and second member adapted to couple with the power distribution device and one of the first and second member is adapted to couple with the wheel, a first universal joint (10) coupling the shaft and the power distribution device (6), a second universal joint (11) coupling the shaft and the wheel.

Lawrence does not directly disclose a suspension of vehicle wherein the external splines includes an isotropic surface finish, and a coating applied to the isotropic surface finish to reduce friction during the telescopic movement; wherein the coating is nylon, or tungsten disulfide.

McClanahan teaches a shaft to transfer torque in a vehicle with the following: a first member (14) having internal splines (26); a second member (12) having external splines (24) engagable with the internal splines (26) to allow telescopic movement between the first member (14) and the second member (12) and to transfer torque between the first member and the second member; the external splines (24) having a coating (30) to reduce friction during the telescopic movement; wherein the first member (14) and the second member (12) are made by steel (see column 3, line 40); wherein

the coating is nylon (see column 4, line 12); wherein the external spline further includes an isotropic surface finish (after finishing coating the external spline 24 by nylon material, the surface finish of the external spline become smooth to reduce friction, therefore, smooth surface finish is considered to correspond with isotropic surface finish) in order to prevent the shaft from being damaged upon telescopic movement.

Further, Hashimoto et al (U.S. 5,503,481) teaches the invention wherein the surface is isotropic surface finish.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify McLanahan's invention by having the surface of external splines formed of isotropic finish as taught by Hashimoto et al then applying a coating on top of isotropic finish in order to sufficiently facilitate telescopic movement between the internal and external splines.

Further, It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify a suspension system of Lawrence by replace his shaft transfer torque by the shaft transfer torque as taught by McClanahan and Hashimoto et al in order to in order to prevent the shaft from being damaged upon telescopic movement, and to sufficiently allow relative movement in the axial direction for shock absorption during normal vehicle operation and for energy absorption during a vehicle crash.

With respect to claims 10-11, it would have been obvious design choice for one having ordinary skill in the art at the time the invention was made to apply a very thin layer of tungsten disulfide on the external spline of McClanahan instead of Nylon in

order to reduce friction such that telescopic movement between the first and second shafts, since it have been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

Response to Arguments

5. Applicant's arguments with respect to claims 3-6 and 9-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan C To whose telephone number is (703) 306-5951. The examiner can normally be reached on Mon-Fri (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on (703) 308-2089. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTo
March 17, 2004


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3/22/04